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SALT LAKE CITY, UTAH

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Extension Department.

Bulletin No. 1.

Serious Menace To The Alfalfa Crop, A Dangerous Alfalfa Insect

E. G. Titus, Entomologist, Utah Ex.
Station

At the present time there are about 30,000 acres of alfalfa (lucerne) in Salt Lake County. Approximately nine-tenths of this, and perhaps more, is now being injured by the alfalfa leaf-weevil.

Native Home

The alfalfa leaf-weevil (*Phytonomus murinus* Fab.) is a European insect, which has caused more or less damage to the alfalfa crop in Europe over considerable periods of years. In some places the injury has been so severe that it has practically stopped the growing of alfalfa for a number of years. So far as we at present know it occurs in no part of the United States except Salt Lake County, Utah. Its advent into our state is of the utmost importance, since it is a pest which not only feeds upon alfalfa, but upon sweet-clover, yellow-clover and red-clover. Though red-clover is not at present largely grown in the state it is used in a number of orchards, and thus would serve as a spreading place for the weevil to the alfalfa fields.

The earliest report of damage by this insect in the state of Utah, was in the spring of 1904 on a farm on the east side of Salt Lake City. Several acres in one field were at that time seriously injured, the first crop being about half lost and the second crop practically destroyed. While this was evidently the first serious loss, it should be considered that it must have taken several years for the insect to multiply in sufficient numbers to cause such an appreciable injury to the crop.

Spreading Rapidly

Since the first report in 1904, the insect has been gradually but slowly spreading, until 1908. Last year there were a very large number of the

weevils developed, and they spread the past year, over a large and extensive new territory. The principal means of distribution of the insect is in the weevil or fullgrown stage, when they pass from field to field by walking; and at certain times in the fall and spring, distribute themselves to a considerable distance by flying. Large numbers of the larvae or young of the insect are carried on hay racks, from the fields to the stacks and barns. This will account for a small amount of distribution since some of these are so nearly full grown that they do not need to feed longer before changing to the weevil stage.

Life History and Injuries

Eggs

The greatest amount of injury is caused during the younger stages of the insect. The eggs are laid by the full grown weevils early in the spring, principally in April and May. The eggs are placed in various parts of the plants, but principally in the sheath, from which the younger leaves and buds are growing. They hatch in from six to nine days, the young worm being pale yellowish in color. They at first feed concealed in the developing leaves, buds and even flowers; as they grow older they work their way to the larger leaves and completely defoliate the plants. The early injury stunts the plant, causing it to branch out. Serious injury in the field appears at a distance like frost; but a closer examination will show thousands of the young worms feeding upon the plants. When the worm is full grown it is green, about the color of the alfalfa leaves, but has a white stripe down its back. It is over a quarter of an inch long. This full grown larvae drops to the ground and spins a loose, lace-like cocoon in which it later turns into the weevil. From two to three weeks after this cocoon is formed, the fully developed insect makes its way out, crawls up the stem of the alfalfa and begins feeding. The weevil is at first light brown in color, with several lighter lines running lengthwise on its back. It has hard wing covers and a distinct beak pro-